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Date: 13 June 2001 By: Vladimir Skliba

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Amy H. Yin, et al.

Serial No.: Not yet assigned

Examiner: G.Ewoldt (in the parent)

Art Unit: 1644 (in the parent)

Filed: Herewith

For: HUMAN HEMATOPOIETIC STEM AND PROGENITOR CELL ANTIGEN AND METHODS FOR ITS USE

Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination of the above-identified application, the Examiner is respectfully requested to enter the following amendments.

IN THE SPECIFICATION

Please insert the following paragraph on page 1, on the first line after the title:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a Continuation Application of Application Serial Number 08/842,382, filed April 23, 1997 which is a Continuation-In-Part (CIP) of Application Serial Number 08/639,891, filed April 26, 1996. Each of these cited Applications are hereby incorporated, in their entirety, by reference.

IN THE CLAIMS

Please cancel claims 1-12, 28-34 and 39-40.

Please replace claims 26, 27, 35, 36, and 48 with the substitute claims below. Attached hereto is a marked up version of these claims showing the changes.

26. (Amended) An expression vector comprising the nucleic acid molecule of claim 21.

27. (Amended) A cell transfected with the vector of claim 26.

35. (Amended) A method for identifying a ligand that binds to human hematopoetic stem cells, comprising detecting binding of said ligand with an isolated polypeptide wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence.

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36. (Amended) A reagent that specifically binds to an isolated polypeptide wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-

polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence.

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48. (Amended) A ligand for AC133 identified by the method of claim 35.

Please add the following new claims, claims 52-79.

52. (New) A method for selecting a population of AC133 positive cells comprising:

contacting a mixed population of cells with an antibody specific for AC133 antigen, and

selecting those cells that bind to said antibody.

53. (New) The method of claim 52, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

54. (New) The method of claim 52, wherein said antibody is a monoclonal antibody.

55. (New) The method of claim 54, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

56. (New) The method of claim 52, wherein said antibody is fluorochrome conjugated.

57. (New) The method of claim 56, wherein said selecting with said fluorochrome conjugated antibody is by flow cytometry.

58. (New) The method of claim 52, wherein said antibody is conjugated to magnetic particles.

59. (New) The method of claim 58, wherein said selecting with said magnetic particle conjugated antibody is by high gradient magnetic selection.

60. (New) The method of claim 52, wherein said mixed population of cells is derived from bone marrow, fetal bone marrow, liver, umbilical cord, blood, or cytokine mobilized blood.

61. (New) A method of identifying cells that express AC133 antigen comprising:

contacting a population of cells with an antibody specific for AC133 antigen and detecting those cells that bind to said antibody.

62. (New) The method of claim 61, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

63. (New) The method of claim 61, further comprising the step of isolating the detected cells.

64. (New) The method of claim 61, wherein said antibody is a monoclonal antibody.

65. (New) The method of claim 64, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

66. (New) The method of claim 63, wherein said antibody is fluorochrome conjugated.

67. (New) The method of claim 66, wherein said isolating with said fluorochrome conjugated antibody is by flow cytometry.

68. (New) The method of claim 63, wherein said antibody is conjugated to magnetic particles.

69. (New) The method of claim 68, wherein said isolating with said magnetic particle conjugated antibody is by high gradient magnetic selection.

70. (New) The method of claim 61, wherein said population of cells is derived from bone marrow, fetal bone marrow, liver, umbilical cord, blood, or cytokine mobilized blood.

71. (New) A substantially pure population of AC133 positive cells and progeny thereof, wherein said cells are obtained by a method for selection of a population of said cells comprising:

contacting a mixed population of cells with an antibody specific for AC133 antigen, and

selecting those cells that bind to said antibody.

72. (New) The method of claim 71, wherein AC133 antigen has the amino acid sequence SEQ ID NO: 2.

73. (New) The population of AC133 positive cells according to claim 71, wherein said antibody is a monoclonal antibody.

74. (New) The population of AC133 positive cells according to claim 73, wherein said monoclonal antibody is that produced by the hybridoma cell line ATCC HB12346.

75. (New) The population of AC133 positive cells according to claim 71, wherein said antibody is fluorochrome conjugated.

76. (New) The population of AC133 positive cells according to claim 75, wherein said selecting with said fluorochrome conjugated antibody is by flow cytometry.

77. (New) The population of AC133 positive cells according to claim 71, wherein said antibody is conjugated to magnetic particles.

78. (New) The population of AC133 positive cells according to claim 77, wherein said selecting with said magnetic particle conjugated antibody is by high gradient magnetic selection.

79. (New) The population of AC133 positive cells according to claim 71, wherein said mixed population of cells is derived from bone marrow, fetal bone marrow, liver, umbilical cord, blood, or cytokine mobilized blood.

REMARKS

Claims 1-12, 28-34 and 39-40 have been cancelled as these claims, or ones similar to them, have been issued or are being prosecuted in parent cases. Claims 35 and and 36 have been amended to the independent form by including the limitations in the cancelled base claim, claim 28, from which they previously depended. Claims 26, 27 and 48 have been amended to correct errors in antecedent basis. New claims 52-79 have been added to methods of selecting a population of AC133 positive cells using an antibody specific for AC133 antigen, to methods of identifying cells that express AC133 antigen and to a population of AC133 positive cells. These new claims are supported in the specification at page 5, line 24 through page 6, line 1, page 6, lines 18-25, page 16, lines 16-17 and page 38, lines 20-24, *inter alia*. No new matter is added by these amendments.

If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at (650) 843-5000.

The Commissioner is hereby authorized to charge any underpayment of the following fees associated with this communication, or credit any overpayment to Deposit Account No. 03-3117:

[X] Any national application filing fees under 37 CFR 1.16.

[X] Any patent application processing fees under 37 CFR 1.17.

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Marked up version of amended claims showing changes.

26. (Amended) An expression vector comprising [a] the nucleic acid [sequence] molecule of claim 21.

27. (Amended) A cell transfected with the [molecule] vector of claim 26.

35. (Amended) A method for identifying a ligand that binds to human hematopoetic stem cells, comprising detecting binding of said ligand with [the] an isolated polypeptide [of claim 8,] wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence

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36. (Amended) A reagent that specifically binds to [the] an isolated polypeptide [of claim 28] wherein said polypeptide comprises: (1) a first amino acid sequence of AC133 as set forth in SEQ ID NO: 2; (2) a second amino acid sequence wherein said second sequence is a subsequence of said first sequences and is at least 6 amino acids in length; or (3) a third sequence in which at least one amino acid of said first or second sequences is replaced by a different amino acid, with the proviso that said amino acid replacement is a replacement of one acidic residue for another, one basic residue for another, one non-polar residue for another, one uncharged polar residue for another, or one aromatic residue for another, with the proviso that said third sequence is at least 90% identical to said first or second sequence.

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48. (Amended) A ligand for AC133 identified by the method of claim [36] 35.